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EXAMINER

ROMAN, LUIS ENRIQUE

ART UNIT PAPER NUMBER

2836

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,753

Applicant(s)

SIEBENTHALL ET AL.

Examiner

Luis Roman

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicant amendment filed on 07/31/06 has been entered. Accordingly claims 5-21, 23, 24, 26-39 have been kept original, claims 1-4, 22, 25 have been amended and no claims have been cancelled. No new claims were added. It also included remarks/arguments.

Objections to claims 3, 4 & 25 have been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6, 8, 9, 10, 16, 22, 23, 27, 29, 30, 31 & 37 are rejected under 35 U.S.C. §103(a) as being unpatentable over H. C. Anderson (US 3440528) in view of Kane (US 4614925).

Regarding claims 1 & 22 H. C. Anderson discloses an electromagnetic interference filtering apparatus/method (a person of the ordinary skill will understand a method that is intrinsically described by the functioning of the apparatus) comprising: a first filter (Fig. 2 elements 32<left>) with a first end and a second end, said first end is operably connected in series with a first power input terminal of the apparatus (Fig. 2 element POWER SOURCE) said second end is operably connected to a first output terminal of the apparatus (Fig. 2 element CABLE<thru the series path>) thereby disposing said first filter in series and between said first power input terminal and said first output terminal, and an impedance comprising an inductance in series with said filter (Fig. 2 element 32<right>), said impedance also including a capacitance connected

Art Unit: 2836

to a ground (Fig. 2 element 34<right>) wherein said impedance is configured to facilitate matching of an input impedance of the filtering apparatus with that of a voltage source and said inductance and capacitance cooperate to provide filtering of electromagnetic interference (Claim 1).

H. C. Anderson does not disclose a first conductor on a first layer of a circuit card forming a distributed inductance in series with said filter, said impedance also including a second conductor on a second layer of said circuit card operably connected to a ground.

Kane teaches a first conductor on a first layer of a circuit card forming a distributed inductance in series with said filter, said impedance also including a second conductor on a second layer of said circuit card operably connected to a ground (Col. 11 lines 35-39 & Fig. 16(a)<this figure shows the distributed inductance and capacitance, impedance, on a dielectric substrate>).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson device with the Kane teachings because it provide a resonator filter which is composed of an integral construction of inductor and capacitor components, is low in profile, small in size, mechanically stable, has tuning frequencies and Q less dependent on temperature, is stable at high frequencies without suffering from adverse influences due to connector leads, and has a reduced number of components which permit its manufacturing process to be improved.

Regarding claims 2/23 H. C. Anderson in view of Kane discloses the apparatus/method of claims 1/22.

H. C. Anderson further discloses a second filter operably connected to the first power input terminal and a ground (Fig. 2 element 32<middle>, 34<left>).

Regarding claims 6/27 H. C. Anderson in view of Kane discloses the apparatus/method of claims 1/22.

H. C. Anderson further discloses including a fourth filter (Fig. 2 elements 36, 38).

Art Unit: 2836

Regarding claims 8/29 H. C. Anderson in view of Kane discloses the apparatus/method of claims 1/22.

Kane further discloses including at least one of: a first bus bar operably connected to said first power input terminal and said circuit card; and a second bus bar operably connected to said second power input terminal and said circuit card, said first bus bar and said second bus bar comprising a preformed conductor (Col. 17 lines 23-30 & Fig. 36 elements 98,101).

Regarding claims 9/30 H. C. Anderson in view of Kane discloses the apparatus/method of claims 8/29.

Kane further discloses wherein said first and second bus bars are configured to conduct current from an input connector to said circuit card, said first and said second bus bars including a flat portion to facilitate conduction with a conductor of said circuit card (Fig. 36 elements 98,101).

Regarding claims 10/31 H. C. Anderson in view of Kane discloses the apparatus/method of claims 8/29.

Kane further discloses wherein said first and second bus bars are configured to substantially eliminate strain exerted on said circuit card (Fig. 36 elements 98,101<It is implicitly disclosed since a mechanical stronger connection is needed between the printed circuit board and the external devices connected to it in order not to damage it when connecting/disconnecting>).

Regarding claims 16/37 H. C. Anderson in view of Kane discloses the apparatus/method of claims 1/22.

H. C. Anderson further discloses wherein said first and second power terminal corresponding to a voltage source and a ground reference (Fig. 2 POWER SOURCE, CABLE, ground).

Claims 3, 7, 24 & 28 are rejected under 35 U.S.C. §103(a) as being unpatentable over H. C. Anderson (US 3440528) in view of Kane (US 4614925) and Roberts, Jr. et al. (US 6661634).

Regarding claims 3/24 H. C. Anderson in view of Kane discloses the apparatus/method of claims 2/22.

H. C. Anderson in view of Kane does not disclose wherein said second filter comprises a first capacitor and a second capacitor, each capacitor with a first end and a second end, wherein said first end of said first capacitor is operably connected to said first power input terminal and said second end is operably connected to a ground and wherein said first end of said second capacitor is operably connected to said second power input terminal and said second end is operably connected to said ground.

Roberts, Jr. et al. teaches wherein said second filter comprises a first capacitor and a second capacitor, each capacitor with a first end and a second end, wherein said first end of said first capacitor is operably connected to said first power input terminal and said second end is operably connected to a ground and wherein said first end of said second capacitor is operably connected to said second power input terminal and said second end is operably connected to said ground (Fig. 1 element 120).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson in view of Kane device with the Roberts, Jr. et al. device features because this capacitors will act like shorts to ground for a high frequency voltage as a result they will help to filter any surge in the apparatus.

Regarding claims 7/28 H. C. Anderson in view of Kane discloses the apparatus/method of claim 6/27.

H. C. Anderson in view of Kane does not disclose wherein said fourth filter comprises a fourth capacitor and a fifth capacitor, each capacitor with a first end and a second end, wherein said first end of said fourth capacitor is operably connected to said first output terminal and said second end is operably connected to a ground and wherein said first end of said fifth capacitor is operably connected to said second output terminal and said second end is operably connected to a ground.

Art Unit: 2836

Roberts, Jr. et al. teaches wherein a filter comprises a first capacitor and a second capacitor, each capacitor with a first end and a second end, wherein said first end of said first capacitor is operably connected to said first power input terminal and said second end is operably connected to a ground and wherein said first end of said second capacitor is operably connected to said second power input terminal and said second end is operably connected to said ground (Fig. 1 element 120).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson in view of Kane device with the Roberts, Jr. et al. device features because this capacitors will act like shorts to ground for a high frequency voltage as a result they will help to filter any surge in the apparatus. Moreover, it has been held that mere duplication of the essential working parts of a device involves only routine skills in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claims 4, 5, 17, 25, 26 & 38 are rejected under 35 U.S.C. §103(a) as being unpatentable over H. C. Anderson (US 3440528) in view of Kane (US 4614925) and Havot et al. (US 5121078).

Regarding claims 4/25 H. C. Anderson in view of Kane discloses the apparatus/method of claims 3/22.

H. C. Anderson in view of Kane does not disclose a third filter with a first end and a second end, said first end is operably connected in series with said second power input terminal and said second end is operably connected to a second output terminal.

Havot et al. teaches wherein a filter with a first end and a second end, said first end is operably connected in series with said first power input terminal and said second end is operably connected to a first output terminal (Col. 1 lines 28-41 & Fig. 1 element C). It is implicitly disclosed that in a symmetric circuit the capacitor may be connected in series to the first power input terminal path/first output terminal and/or in series to the second power input terminal path/second output terminal).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson in view of Kane device with the Havot et al.

Art Unit: 2836

device features because this capacitor will attenuate/filter a desired range of high frequencies depending on the values chosen for the components.

Regarding claims 5/26 H. C. Anderson in view of Kane and Havot et al. discloses the apparatus/method of claim 4/25.

H. C. Anderson further discloses including another impedance comprising an inductance in series with said third filter, said another impedance also including a capacitance operably connected to a ground (Fig. 7 elements 12, 13, 14), wherein said impedance is configured to facilitate matching of an input impedance of the filtering apparatus with that of a voltage source and said inductance and capacitance cooperate to provide filtering of electromagnetic interference (Col. 7 lines 18-25, the purpose of this matching circuit it is to match impedances of the source with the line and also to filter high frequencies).

H. C. Anderson in view of Kane and Havot et al. does not disclose a third conductor on a first layer of a circuit card forming a distributed inductance in series with said filter, said impedance also including a fourth conductor on a second layer of said circuit card operably connected to a ground.

Kane teaches a first conductor on a first layer of a circuit card forming a distributed inductance in series with said filter, said impedance also including a second conductor on a second layer of said circuit card operably connected to a ground (Col. 11 lines 35-39 & Fig. 16(a) <this figure shows the distributed inductance and capacitance, impedance, on a dielectric substrate>).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson in view of Kane and Havot et al. device with the third and fourth conductor since it has been held that mere duplication of the essential working parts of a device involves only routine skills in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claims 17/38 H. C. Anderson in view of Kane discloses the apparatus/method of claims 1/22.

H. C. Anderson in view of Kane does not disclose wherein said first filter comprises an inductance and capacitance operably connected in parallel.

Havot et al. teaches wherein said first filter comprises an inductance and capacitance operably connected in parallel (Fig. 1 elements L, C).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson in view of Kane device with the Havot et al. device features because this capacitance in parallel with the inductance produces an attenuation at a frequency determined by the values of the capacitor and the inductor.

Claims 11 & 32 are rejected under 35 U.S.C. §103(a) as being unpatentable over H. C. Anderson (US 3440528) in view of Kane (US 4614925) and Brandeau (US 4750266).

Regarding claims 11/32 H. C. Anderson in view of Kane discloses the apparatus/method of claims 8/29.

H. C. Anderson in view of Kane does not disclose wherein said first and second bus bars are configured to facilitate matching of an input impedance of the filtering apparatus with that of a voltage source.

Brandeau teaches wherein said first and second bus bars are configured to facilitate matching of an input impedance of the filtering apparatus with that of a voltage source (Col. 1 lines 12-29<it is obvious that the flat wire may be a metal bar, as both are conductors>).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson in view of Kane device with the Brandeau device because the matching of impedances will prevent from distortion, attenuation and cross-talk of the low power electronic signals traveling along the cable/bar/bus.

Art Unit: 2836

Claims 12 & 33 are rejected under 35 U.S.C. §103(a) as being unpatentable over H. C. Anderson (US 3440528) in view of Kane (US 4614925) and Shimada et al. (US 6020867).

Regarding claims 12/33 H. C. Anderson in view of Kane discloses the apparatus/method of claims 8/30.

H. C. Anderson in view of Kane does not disclose wherein said first and second bus bars are configured to eliminate cable to connector crimp connections to reduce power dissipation and heat generation.

Shimada et al. teaches wherein said first and second bus bars are configured to eliminate cable to connector crimp connections to reduce power dissipation and heat generation (Col. 73 lines 54-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson in view of Kane device with the Shimada et al. device because it minimizes an adverse thermal effect, such as heat distortion.

Claims 13, 14, 18, 19, 34, 35 & 39 are rejected under 35 U.S.C. §103(a) as being unpatentable over H. C. Anderson (US 3440528) in view of Kane (US 4614925) and Stahl (US 5388021).

Regarding claims 13/34 H. C. Anderson in view of Kane discloses the apparatus/method of claims 1/22.

H. C. Anderson in view of Kane does not disclose further including a first and a second of transient absorption devices each transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first power input terminal and said second end is operably connected to a chassis ground and wherein said first end of said second transient absorption device is operably connected to said second power input terminal and said second end is operably connected to said chassis ground.

Stahl teaches including a first and a second of transient absorption devices each transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first power input

terminal (Fig. 13 elements 28<left>, 11, 15) and said second end is operably connected to a chassis ground (Fig. 13 elements 28<left>, ground) and wherein said first end of said second transient absorption device is operably connected to said second power input terminal (Fig. 13 elements 28<right>, 12, 15) and said second end is operably connected to said chassis ground (Fig. 13 elements 28<right>, ground).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson in view of Kane device with the Stahl device because it provides voltage surge and transient suppressor using clusters of metal oxide varistors which represents a device light in weight and compact in size.

Regarding claims 14/35 H. C. Anderson in view of Kane discloses the apparatus/method of claims 1/22.

H. C. Anderson in view of Kane does not disclose further including a transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first power terminal and said second end is operably connected to said second power terminal.

Stahl teaches a transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first power terminal and said second end is operably connected to said second power terminal (Fig. 13 elements 42, 11, 12, 15).

Regarding claims 18/39 H. C. Anderson in view of Kane discloses the apparatus/method of claims 1/22.

H. C. Anderson in view of Kane does not disclose further including a third and a fourth transient absorption device each transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first output terminal and said second end is operably connected to a chassis ground and wherein said first end of said second transient absorption device is operably connected to said second output terminal and said second end is operably connected to said chassis ground.

Stahl teaches further including a third and a fourth transient absorption device each transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first output terminal (Fig. 13 elements 29<right>, 13) and said second end is operably connected to a chassis ground (Fig. 13 elements 29<right>, ground) and wherein said first end of said second transient absorption device is operably connected to said second output terminal (Fig. 13 elements 29<left>, 14) and said second end is operably connected to said chassis ground (Fig. 13 elements 29<left>, ground).

Regarding claim 19 H. C. Anderson in view of Kane discloses the apparatus of claim 1.

H. C. Anderson in view of Kane does not disclose further including another transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first output terminal and said second end operably connected to said second output terminal.

Stahl teaches further including another transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first output terminal and said second end operably connected to said second output terminal (Fig. 13 elements 32, 13, 14).

Claim 21 is rejected under 35 U.S.C. §103(a) as being unpatentable over H. C. Anderson (US 3440528) in view of Roberts, Jr. et al. (US 6661634).

Regarding claim 21 H. C. Anderson discloses the apparatus of claim 1.

H. C. Anderson does not disclose further including a connector in operable communication with said first power input terminal.

Roberts, Jr. et al. teaches a connector in operable communication with said first power input terminal (Fig. 2 elements 95, 90).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson device with the Roberts, Jr. et al. device

Art Unit: 2836

because it provides a way of connecting/disconnecting the device from the power input terminal as required.

Claims 15 & 36 are rejected under 35 U.S.C. §103(a) as being unpatentable over H. C. Anderson (US 3440528) in view of Kane (US 4614925) and Bender (US 6926288).

Regarding claims 15/36 H. C. Anderson in view of Kane discloses the apparatus/method of claims 1/22.

H. C. Anderson in view of Kane does not disclose further including a first and a second resistor-capacitor filter comprising a series combination of a resistor and a capacitor, each resistor-capacitor filter with a first end and a second end, wherein said first end of said first resistor-capacitor filter is operably connected to said first power input terminal and said second end is operably connected to a chassis ground and wherein said first end of said second resistor-capacitor filter is operably connected to said second power input terminal and said second end is operably connected to a chassis ground.

Bender teaches a resistor-capacitor filter comprising a series combination of a resistor and a capacitor, said resistor-capacitor filter with a first end and a second end, wherein said resistor-capacitor filter is operably connected to said first power input terminal and said second end is operably connected to a chassis ground (Col. 8 lines 56-59 & Fig. 4(b) elements R, C).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson in view of Kane device with the Bender device because the dampening mechanism can serially connect a resistance to a decoupling capacitance to protect the device and reduce the conducted and radiated EMI emissions.

Moreover, Bender discloses the claimed limitation except for the second resistor-capacitor filter. It would have been obvious to one having ordinary skills in the art at the time the invention was made to add a second resistor-capacitor filter to the negative terminal of the source due to symmetry of the device, since it has been held that mere duplication of the essential working parts of a device involves only routine skills in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claim 20 is rejected under 35 U.S.C. §103(a) as being unpatentable over H. C. Anderson (US 3440528) in view of Kane (US 4614925) and Knigge et al. (US 6639779).

Regarding claim 20 H. C. Anderson in view of Kane discloses the apparatus of claim 1.

H. C. Anderson in view of Kane does not further disclose including a first and a second positive temperature coefficient device, each positive temperature coefficient device with a first end and a second end, wherein said first end of said first positive temperature coefficient device is operably connected to said first output terminal and said second end is operably connected to a load and wherein said first end of said second positive temperature coefficient device is operably connected to said second output terminal and said second end operably connected to said load.

Knigge et al. teaches including a first and a second positive temperature coefficient device, each positive temperature coefficient device with a first end and a second end, wherein said first end of said first positive temperature coefficient device is operably connected to said first output terminal and said second end is operably connected to a load and wherein said first end of said second positive temperature coefficient device is operably connected to said second output terminal and said second end operably connected to said load (Fig. 5A elements R2, R3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the H. C. Anderson in view of Kane device with the Knigge et al. device because this devices will protect the filter from excessive heat which may produce a malfunction or damage to the device.

Applicant's arguments with respect to claims 1-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is 571-272-5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.

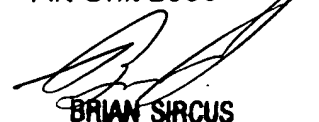
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.

Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LR/101506

Luis E. Román
Patent Examiner
Art Unit 2836



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